

local lists of both insects and plants, would be steps in the right direction. For this study involves such a variety of elements which go to determine the ecological relations of the plant and insect life—the fauna and flora—of the regions we are considering, that much time and study will be necessary. But the results will be commensurate with the labor, for they will not only add greatly to our knowledge, but also clear up some of the most interesting of the unsettled problems of biology.

On the Orthopteran Genus *Agencotettix*, with a description of a new species from Illinois.

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A study of a series of specimens of the genus *Agencotettix* from Illinois has given rise to the question whether there has not been discrepancies, by authors, in the identity of the described species of this genus. This refers especially to the species found in the region about Chicago, which is evidently undescribed, or more properly has been mistaken for another species. But before further discussing this phase of the subject it may be well first to give a brief resumé of the literature. In 1898, Dr. S. H. Scudder* published "A Preliminary Classification of the Tryxalinæ of the United States," wherein is noted the following definition of the genus *Agencotettix*: "Pronotum not constricted in the middle, the prozona slightly the longer, lateral carinæ obsolete on the prozona." Scudder † again describes the genus as follows: "Generally smaller forms. Median carina of prozona not cut by the transverse sulci, foveolæ of male subequal, rhomboidal; hind tibiæ red, lower apical spur of inner side of same fully half as long again as upper spur."

McNeill ‡ first proposed the present accepted name *Agencotettix*, substituting this name for *Eremnus* which was preoccupied. In his key to the genera of *Tryxalinæ* || we find his genus distinguished as follows: "Median carina of the pronotum cut behind the middle of the pronotum. Vertex of the head destitute of a median carina. Posterior margin of the metazone very obtusely angulate." According to this author,

* Psyche, viii, No. 267, p. 231.

† Guide to the Genera and Classification of the North American Orthoptera, p. 31, 1897.

‡ Psyche, viii, p. 71.

|| Revision of the Truxalinæ of North America, Proc. Daven. Acad. Nat. Sci., vi, 1897.

there are two species of *Ageneotettix*, namely: *deorum* Scudder, and *scudderi* Bruner. But McNeill further states in his Revision, p. 269, that it is quite probable that the former species is identical with the latter, implying thereby that *scudderi* is the only representative valid species. In another place he mentions also under *E. scudderi* Bruner, that "One variety of this species has the vertex usually broad between the eyes, with the anterior margins bounded by carinae, which meet at an angle much greater than a right angle even in the male." This variety, McNeill adds, was received from Prof. Gillette under the name of *Aulocara scudderi* Bruner, and another form with narrower vertex under the appellation *Dociostaurus coloradensis*. "Both forms being named by comparison with specimens determined by Prof. Bruner."

The present status of the described species according to Scudder's Alphabetical Index to North American Orthoptera is that the two species *deorum* and *scudderi* are the only ones retained. Scudder and Cockerell* noted both species as occurring in New Mexico, a third species which was not described is also mentioned by them.

As intimated in the beginning of this paper my present contention is that still another species occurs in Illinois. Its identity becoming evident after study of a series of specimens from Chicago. The confirmation of this species was made possible by comparison with a type specimen of *scudderi* which Prof. Bruner kindly presented to me. The difference between *scudderi* and the Illinois form, which for convenience is called *arenosus*, is very marked, yet this latter species has probably been confused by Lugger and Blatchley as *scudderi*. Both of these writers described and figured it under the latter name in each of their State catalogues of Orthoptera. Moreover, McNeill probably also refers to it in part, in his Revision under *scudderi*, as occurring in a few localities near Moline, Illinois. Though the description given by Blatchley † under *A. scudderi* fits *arenosus* quite accurately, I have drawn up the following comparisons of the two species side by side, that they may be readily recognized:

* A first list of the Orthoptera of New Mexico, Proc. Daven. Acad. Sci., ix, p. 27, 1902.

† Orthoptera of Indiana, p. 248, 1902.

scudleri Bruner.

♀ type specimen from Lincoln, Nebraska.

Body of moderate size.

Vertex distinctly produced, the anterior carinæ meeting at an angle slightly less than a right angle, the foveolæ but lightly impressed.

Pronotum with the posterior border distinctly obtuse angulate.

Tegmina nearly reaching to the tips of the knees of hind femora.

Hind femora incrassate.

Color grayish, tegmina marked by more or less numerous subquadrate dark spots, hind femora marked by three obscure blackish bands, the middle one more evident than the rest, the knees outwardly blackish, variegated with gray, deeper black on the inside; tibiæ coral red, with whitish annula at the base; under surface of the body yellowish white.

Measurements: length of body, female, 22 mm.; pronot.; 3.9 mm.; tegmina, 14 mm.; post. femora, 12.5 mm.

arenosus sp. nov.

Type from Chicago, Illinois.

Body small, rather slender.

Vertex very little produced, the prominent carinæ formed anteriorly into a distinct right angle, enclosing a deep crescentic impression, the foveolæ deeply impressed.

Pronotum with the posterior border convexo-subangulate.

Tegmina not reaching to the knees of the hind femora.*

Hind femora slender.

Color dull brownish or purplish-brown, the tegmina marked by numerous, small, dark, quadrate spots. Very frequently a median light testaceous band extends from the vertex backwards on the middle of the head, pronotum and the tegmina to the tips; this band slightly darker forwards on the head and pronotum, here enclosed on either side by a black line which widens into triangular spots at the distal half of pronotal disk; hind femora marked by three obscure blackish bands, the posterior one broader and more evident, the knees deep black; tibiæ coral red, with a whitish basal annulus, rarely immediately followed by a second dusky anulus or minute pigmented spots; ventral surface of the body light or darker yellowish brown.

Measurements: length of body, female, 19.5-20 mm.; pronot., 2.9 mm.; tegmina, 11 mm.; post. femora, 11.5 mm. Male measured to end of tegmina, 15 mm.; pronotum, 2.7 mm.; tegmina, 9-9.5 mm.; post. femora, 10.5 mm.

* The figure of *scudleri* Bruner, given by Luggler, and later copied by Blatchley appears to be the long-wing form of *arenosus*.

Habits.—This small locust seems to be quite local in distribution, having been taken only at Cheltenham (Chicago). Here I found the entire series of eighteen specimens, living within an area of twenty yards, on light sandy ground, sixty yards from the lake shore. All the mature specimens were found during July and August. In the afternoon of August 26, 1901, a number of this species were discovered at the point above mentioned secreted on the ground among the accumulated remains of dried twigs and leaves, fallen from the weeds. Individuals with the light dorsal stripes were especially well protected against this background. Out of six specimens taken on the above date, one was a dull brown, without the median stripe. In fact, the striped form of coloring is the prevailing one. When an attempt was made to capture these shy little insects with the unaided hand, they jumped energetically, using their wings rather sparingly in their attempts to escape.

SPRAY, O, SPRAY.

(E. G. Packard in Fruitman's Guide.)

Spray, farmers, spray with care,
Spray the apple, peach and pear ;
Spray for scab, and spray for blight,
Spray, O spray, and do it right.

Spray the scale that's hiding there,
Give the insects all a share ;
Let your fruit be smooth and bright,
Spray, O spray, and do it right.

Spray your grapes, spray them well,
Make first class what you've to sell,
The very best is none too good,
You can have it, if you would.

Spray your roses, for the slug,
Spray the fat potato bug ;
Spray your cantaloupes, spray them thin,
You must fight if you would win.

Spray for blight, and spray for rot,
Take good care of what you've got ;
Spray farmers, spray with care,
Spray, O spray the buglets there.